

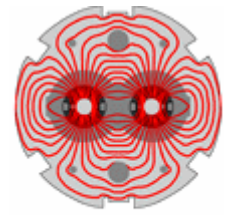
Assessment of LHC@FNAL

Our Status After 183 Days (6 months)

Erik Gottschalk
3 November, 2005



Overview

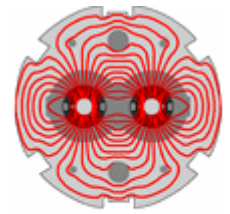


LARP

- Charge for our task force
- Task force members & advisory committee members
- What we have been (or will be) working on:
 - Requirements
 - Review recommendations
 - Site visits
 - WBS
 - FY06 budget
 - LHC@FNAL space
 - Computing security
- Status



Charge



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Charge from Fermilab Director Mike Witherell (April 2005):

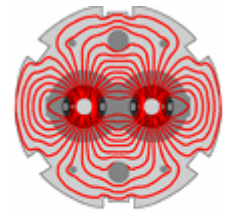
- Define the **high level requirements** for a remote operations center for commissioning and operations of CMS and the LHC accelerator.
- Develop **cost and schedule estimates** for the implementation of a remote operations center.

I would like the committee to prepare a **preliminary report by the end of July 2005**, describing the requirements and scope of a remote operations center located at Fermilab.

The committee should prepare its **final report, including a resource loaded schedule, by the end of 2005.**



LHC@FNAL Task Force

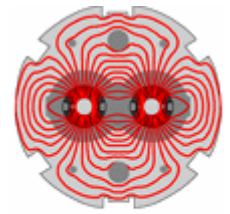


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- Erik Gottschalk – Chair (FNAL-PPD)
- Kurt Biery (FNAL-CD)
- Elvin Harms (FNAL-AD)
- Shuichi Kunori (U. of Maryland)
- Mike Lamm (FNAL-TD)
- Mike Lamont (CERN-AB)
- Kaori Maeshima (FNAL-PPD)
- Patty McBride (FNAL-CD)
- Elliott McCrory (FNAL-AD)
- Suzanne Gysin (FNAL-CD)
- Jean Slaughter (FNAL-AD)
- Al Thomas (FNAL-CD)



LHC@FNAL Advisory Committee

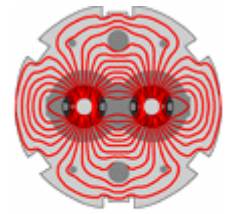


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- Alvin Tollestrup (FNAL-PPD)
- Austin Ball (CERN)
- Avi Yagil (FNAL-PPD)
- Bob Mau (FNAL-AD)
- Dan Green (FNAL-PPD)
- David Rice (Cornell)
- Dragoslav Lazic (Boston U.)
- Frank Glege (CERN)
- Hans Falk Hoffmann (CERN)
- Hermann Schmickler (CERN)
- Jim Kowalkowski (FNAL-CD)
- Jim Patrick (FNAL-AD)
- Joel Butler (FNAL-PPD)
- Katherine Copic (U. of Mich.)
- Lothar Bauerdick (FNAL-CD)
- Margaret Votava (FNAL-CD)
- Mike Church (FNAL-AD)
- Mike Syphers (FNAL-AD)
- Mike Tartaglia (FNAL-TD)
- Roberto Saban (CERN)
- Roger Bailey (CERN)
- Sandor Feher (FNAL-TD)
- Steve Peggs (BNL)
- Vladimir Shiltsev (FNAL-AD)
- Wesley Smith (U. of Wisc.)
- William Trischuk (U. of Toronto)



Requirements Document



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- **Requirements Document reviewed**
 - July 21, 2005
 - Revisions made in response to recommendations from reviewers
- **Document submitted to FNAL Director**
 - July 29, 2005
- **Meeting with Pier Oddone August 1st**
 - Enthusiastic response
 - ...“comprehensive document”
 - Discussed space for LHC@FNAL (FESS)
- **Presentation to CERN AB Management**
 - August 8, 2005 (presented by Mike Lamont)
 - “...project should receive some support from CERN but in view of limited benefits to us, the level of activity should be kept to a bare minimum.”

Preliminary
LHC@FNAL Requirements

Document 165

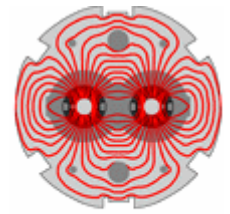
Edited by

Erik Gottschalk, Elvin Hanna, Shuichi Kuroi, Michael Lamm,
Mike Lamont, Kiori Maeshima, Patricia McBride, Elliott
McCroey, Suzanne Paroski, Jean Slaughter

Erik's comment: document is in good shape, but needs some more work.



Review Recommendations



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All of the material for the review and recommendations from review committee are available on our website:

<http://home.fnal.gov/~eeg/remop.html>

Two of the seven recommendations:

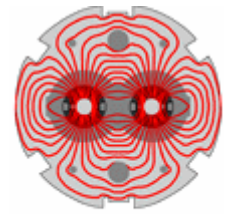
#5: There should be a strong requirement that the Remote Operations Centre should maintain to the greatest extent possible **consistency in hardware and software** with CERN and CMS.

#6: More work needs to be done on the details of how this facility would be used... The project team should **develop an operations model soon for both CMS and LHC** that explains how the personnel at the Remote Operations Centre will interact with CERN and CMS staff (and members of the LHC community in North America).

Erik's comment: despite good progress on the model, I don't see this getting done soon.



Site Visits



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Completed site visits:

- TRECC (Dupage Airport – near Fermilab)
- Gemini Project remote control room (Hilo, HI)
- Jefferson Lab control room (Newport News, VA)
- Hubble Space Telescope & STScI (Baltimore, MD)
- National Ignition Facility control room (Livermore, CA)
- General Atomics (San Diego, CA)

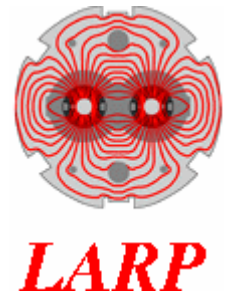
Upcoming site visits (see Suzanne's talk):

- SNS control room (Oak Ridge, TN)
- Argonne APS control room (Argonne, IL)

Erik's comment: site visits have been VERY useful as we develop our plans.



WBS



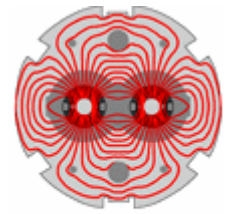
We are just now beginning to work on the WBS itself.

- Suzanne is evaluating our needs for participation in LHC.
- Kurt is beginning to evaluate our needs for participation in CMS (CMS KBook? PVSS?)
- Gary's work on the layout of LHC@FNAL is needed to develop cost estimates for construction (FESS).
- Site visits have been useful to see what modern control rooms look like, and issues that are dealt with during the design.
- The 11th floor remote operations center is expected to give us firsthand experience with remote participation in CMS & LHC.

Erik's comment: the WBS is where most of our effort needs to be focused now.



FY06 Budget



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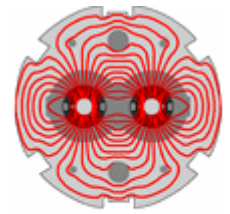
For FY06 we requested \$146K of M&S for travel and R&D expenditures from PPD. We also asked for 2.7 FTEs from CD.

- We reduced our request to \$110K after negotiations with PPD.
- In 2 out of 3 budget scenarios our PPD budget is \$0.
- CD has reduced our FTE request to 0.7 FTEs.

Erik's comment: FY06 does not look good for us.



LHC@FNAL Space



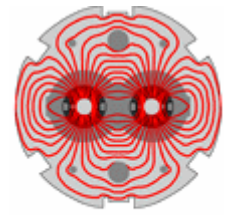
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See Elvin's talk...

Erik's comment: I believe we are making very good progress on LHC@FNAL space considerations, but we also need to begin getting cost and schedule estimates for the WBS.



Computing Security



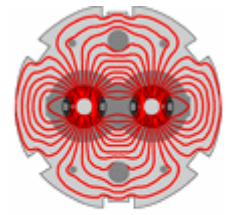
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We need to do a better job of understanding how CERN and FNAL computing security affects LHC@FNAL.

- Can we have LHC@FNAL PCs on .cern.ch instead of .fnal.gov?
- Are CERN Windows Terminal Services enough to get access to data, or do we need other types of “gateways.”
- Do we need direct access to ORACLE databases, perhaps using some form of database replication.



Status



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- We have an excellent start on LHC@FNAL requirements, but additional work is needed before the end of the year.
- We have developed ideas regarding LHC operations, but don't have anything for CMS. On the other hand, CMS itself doesn't have an operations model.
- Site visits have been very successful.
- Most of our efforts need to be focused on the WBS.
- We don't have a budget.
- We have made good progress on space considerations.
- We have much more to learn about CERN & FNAL computing security.